

Pre Engineered Buildings

Structural Steel Fabrication & Erection

Space Frames

General Steel Fabrication

Sheeting

Vessels and storage tanks

Waste management products



**METARCH**  
ENGINEERING & CONTRACTING PVT. LTD.  
creative steel structures

[www.metarchengineering.com](http://www.metarchengineering.com)

## About METARCH Engineering



METARCH Engineering was founded in 2015, at Tirunelveli, Tamil Nadu for Design, Fabrication and Erection of Pre Engineered and Hot Rolled Structural Steel Members, Space Frames Etc. We are also equipped to do General Fabrication and Erection, Pressure Vessels, Heat Exchangers, Storage Tanks etc.

We are authorised manufacturer and supplier of BERGMANN waste collection products (Portable/Mobile compactors, Roto Compactors, Roll Packer, Portable and Integrated Bin lifters etc.) for Middle East and South Asia. We are specialised in Compactors, Hook Lift Containers, Skip Containers Etc.

## Advantages of METARCH Engineering

- Quality Products with competitive price
- Shortest Delivery Time
- On call Special Service Team
- Efficient Design
- Qualified Technical Team

### OUR VISION

To provide innovative and technologically advanced designs and structures to our customers and emerge as a nationally acclaimed organization.

### OUR MISSION

To offer quality solutions and constantly strive to meet our customer needs and expectations on service and price. To perform periodic reviews and to continuously improve technology with honesty and integrity towards the customers and our employees.

### Quality Policy:

*METARCH Engineering Quality Policy is to Manufacture and Deliver the Quality Products with short delivery time with competitive price to the customers and fulfil the commitments.*



Our strength of proficient execution is backed by our experienced in-house designers and project managers with years of experience in turnkey projects, scheduling and project management services of steel structures. We have the infrastructure and technical capabilities to undertake turnkey projects in large volumes. We also have a fully equipped mechanized workshop amenity and we are well reputed for its track record in implementing and completing projects to meet customer satisfaction and on schedule.

Our production plant is well equipped for efficient and quality production and capable of delivering services all over.

- Rolling Machine 3000 x 32 mm
- Press Brake 450 T. Capacity ( 4000 x 14 mm )
- Shearing Machine ( 3000 x 10 mm )
- CNC Plasma Cutting Machine (12000x3000mm)  
3 Oxy fuel and 1 Plasma Torches
- Lathe (2400mm - 100 mm Spindle)
- Milling and Drilling (Automatic - Upto 60mm Capacity)
- Band Saw ( Fully Automatic – 550 DC)
- Iron Worker 110 T
- Heavy Duty Radial Drilling Machine - Fully Automatic  
60x1700 mm
- Over Head Cranes and Fork Lifts Etc.
- Blasting and Painting

## OUR SERVICES

- **Pre Engineered Buildings**
- **Structural Steel Fabrication & Erection**
- **Space Frames**
- **General Steel Fabrication**
- **Sheeting**
- **Vessels and storage tanks**
- **Waste management products**

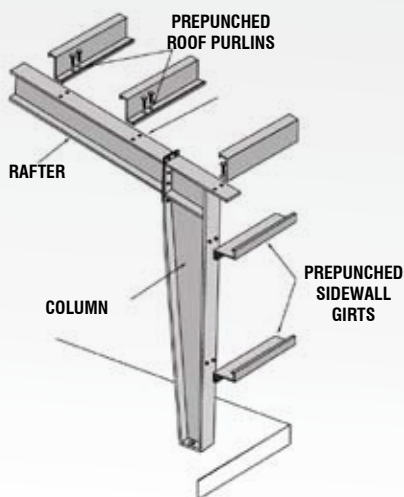
# MET (PEBs)



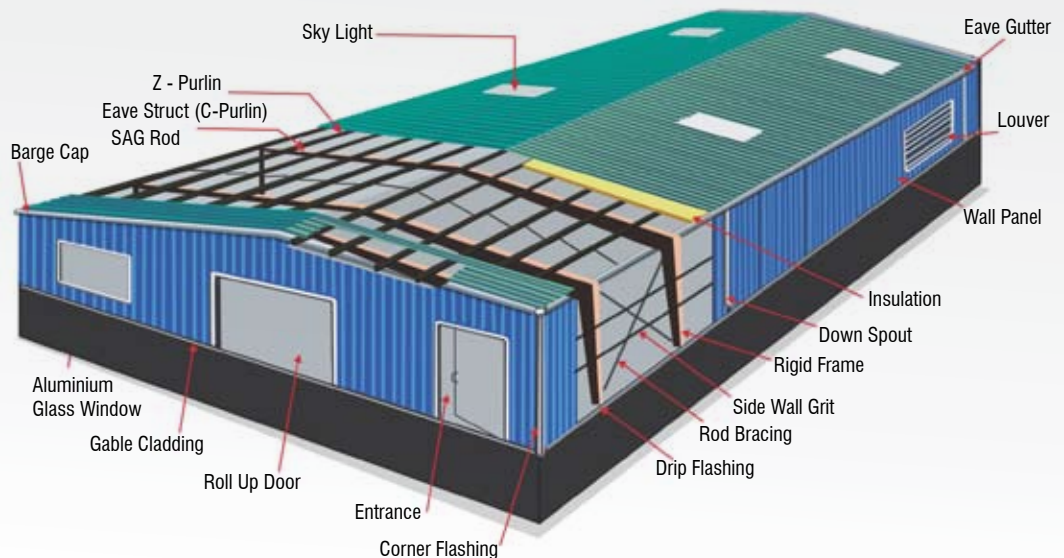
Pre Engineered Building systems are sophisticated software developed systems which are designed to create buildings for a specific use. The complete building system is Pre Engineered to facilitate easy production and assembly on site with maintenance-free exteriors.

Metarch PEBs can withstand the ravages of weather, require minimum maintenance, last longer and can thereby provide a lower life cycle building cost. We make sure that all quality standards are met to its merits at our fabrication work shop. This single window approach ensures the customer a hassle free experience from the stage of planning to the commissioning of building with complete design support including foundations.

## PRIMARY & SECONDARY FRAMES



## PEB BUILDING SYSTEM



# PRE ENGINEERED BUILDINGS (PEBs)



Features of Pre Engineered Building System

## Primary Frames

Primary frames are the main load carrying and support members of a pre-engineered building. The PEB rigid frame comprises of tapered columns and tapered rafters (the fabricated tapered sections are referred to as built-up members).

## Secondary Frames

Secondary frames includes Purlins, Girts and Eave Struts. These are used to support the wall and roof panels. Purlins are used on the roof; Girts are used to provide framework for wall cladding for sidewalls and endwalls. All eave struts are cold formed C sections well suited at the corners to support sheetings.

## Bracings and Fasteners

These are items that are required in every Steel Structure. They include Anchor Bolts, Connection Bolts, Sag Rods and Cable Bracing Components. Longitudinal cross bracing, used to provide lateral stability to the structure against wind, seismic or other forces

## Mezzanine floors

The mezzanine framing is connected to the main rigid frame columns for lateral stability. Standard mezzanine structure consists of built-up beams that support built-up, hot-rolled or cold-formed mezzanine joists which in-turn support a metal deck. A reinforced concrete slab is cast on the metal deck as a finished surface.

MEZZANINE FLOOR

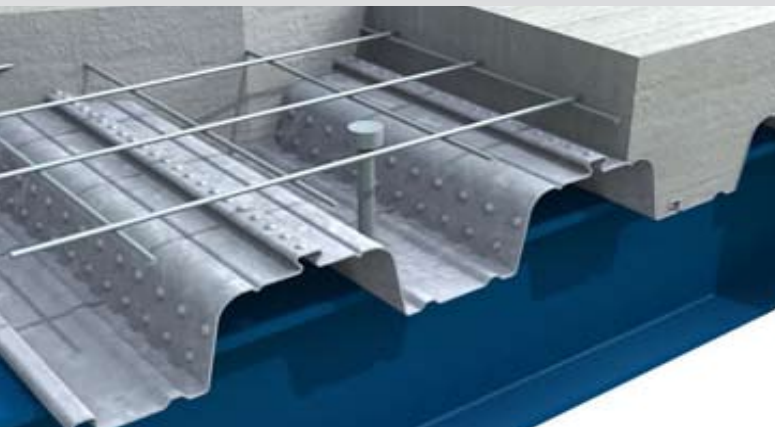


SHEETING & CLADDING



## Deck Floors

This decking profile can be used as a composite floor system or as a permanent form work for all multi storey solutions. It binds with concrete slab and together forms a part of the floor structure. The interlocking between the concrete and the floor deck formed by a system of embossment and ribs that are built into the deck, creates a reinforced concrete slab. This fast and simple installation using high strength product, gives immediate access to a working platform of permanent form and positive reinforcement.



## Canopies and Roof extensions

Canopies are available either on the sidewalls or endwalls. These can be either at eave (called eave overhang) for a simple overhang or for covered storage for equipment and/or vehicles, or below eave (below eave canopy) for an architectural porch.

Roof Extensions are a continuation of the roof over the endwall. They are offered in standard Bay Spacing.

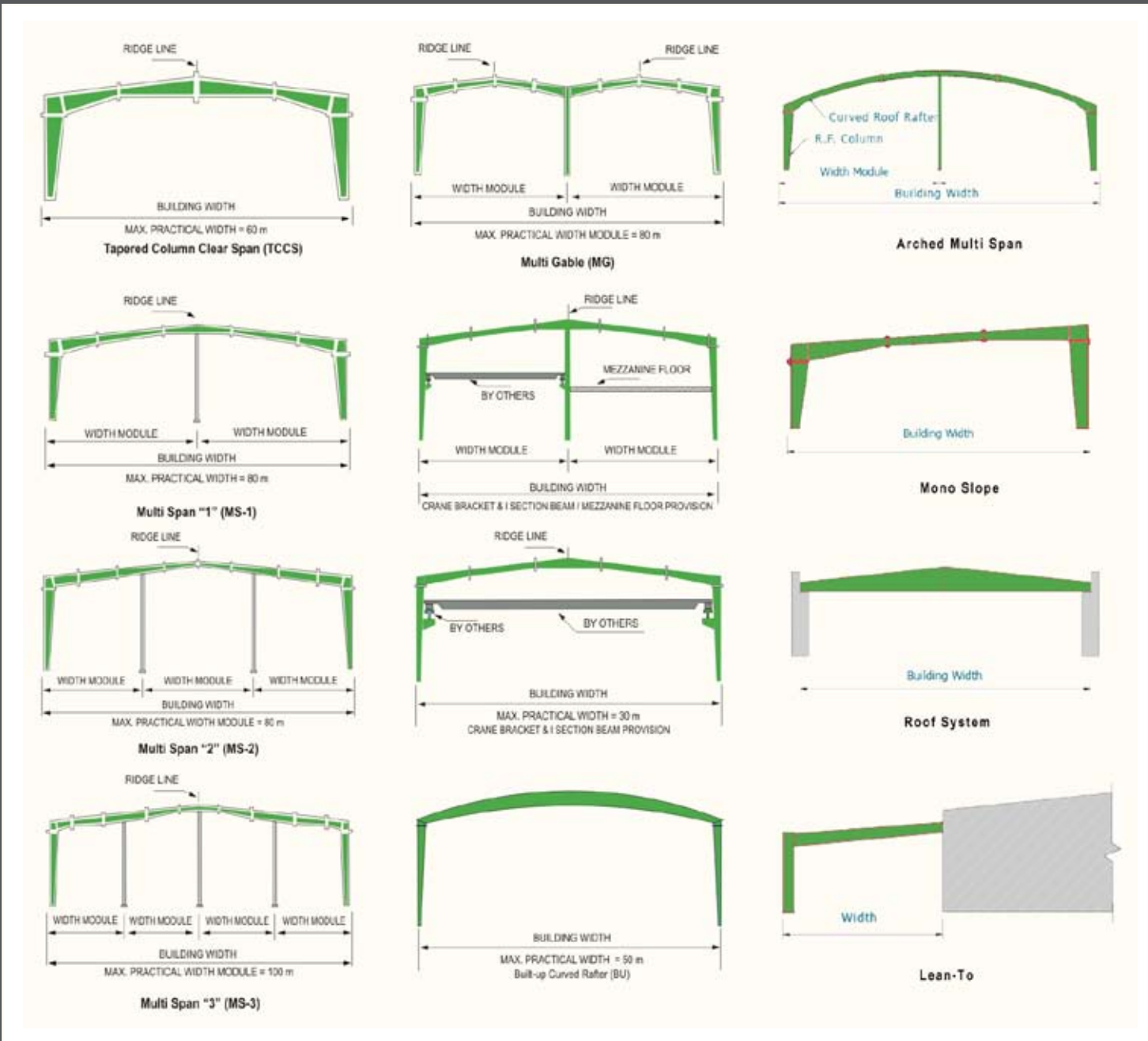


## Fascia

They are available at either on the sidewalls or endwalls, in widths matching the bay spacing. Heights may vary from 600 mm to 3000 mm depending on what it takes to conceal your roof or gain needed space for signage.



# PEB TYPES



# CRANE SYSTEM



Crane in industrial buildings are used to improve material handling productivity and to allow more efficient utilization of space by reducing or eliminating traffic due to forklifts etc. The crane runway beams are simply supported built-up sections with cap channels. Also, since it's a built-up member, it can be tapered – saving the beam costs for large spans.

## Advantages of Pre Engineered Buildings

**REDUCED CONSTRUCTION TIME:** Buildings are typically delivered in just a few weeks after approval of drawings. Foundation and anchor bolts are cast parallel with finished, ready for the site bolting. The use of PEB will reduce total construction time of the project by at least 50%. This also allows faster occupancy and earlier realization of revenue.

**LOWER COST:** Due to the systems approach, there is a significant saving in design, manufacturing and on site erection cost. The secondary members and cladding nest together reducing transportation cost.

**FLEXIBILITY OF EXPANSION:** Buildings can be easily expanded in length by adding additional bays. Also expansion in width and height is possible by pre designing for future expansion.

**LARGE CLEAR SPANS:** Buildings can be supplied to around 80M clear spans.

**QUALITY CONTROL:** As buildings are manufactured completely in the factory under controlled conditions the quality is assured.

**LOW MAINTENANCE:** Buildings are supplied with high quality paint systems for cladding and steel to suit ambient conditions at the site, which results in long durability and low maintenance coats.

**ENERGY EFFICIENT ROOFING AND WALL SYSTEMS:** Buildings can be supplied with polyurethane insulated panels or fiberglass blankets insulation to achieve required "U" values.

**ARCHITECTURAL VERSATILITY:** Building can be supplied with various types of fascias, canopies, and curved eaves and are designed to receive pre cast concrete wall panels, curtain walls, block walls and other wall systems.

**SINGLE SOURCE RESPONSIBILITY:** As the complete building package is supplied by a single vendor, compatibility of all the building components and accessories is assured. This is one of the major benefits of the pre engineered building systems.



# MULTI LEVEL CAR PARKING (MLCP)



Multi-storey car parks can be designed in steel so that they are safe, easy to use and economical. The advantage of a steel framed car park is that the building can be designed around the car parking, and not the car parking designed around the building, as is the case with concrete car parks. Steel framing is lightweight, strong and slender, allowing large clear open floor spaces, with minimum floor to floor heights.

Multi-storey car parks are unique buildings in which all elements of the structure are normally exposed to the public. Little weather protection is required and the top floor covered or uncovered.

Multi-level Parking systems in steel have provided relief to all the above problems since they come with a number of advantages like-

- optimal utilization of space
- lower maintenance and operational cost
- lower construction cost (owing to the prefabrication)
- secure and environment-friendly nature (the underground implementation renders the outdoor space free for landscaping)
- comfortable for the drivers
- cost saving for builders by saving height or depth
- withstand high wind speeds and seismic loads



# STRUCTURAL STEEL FABRICATION & ERECTION

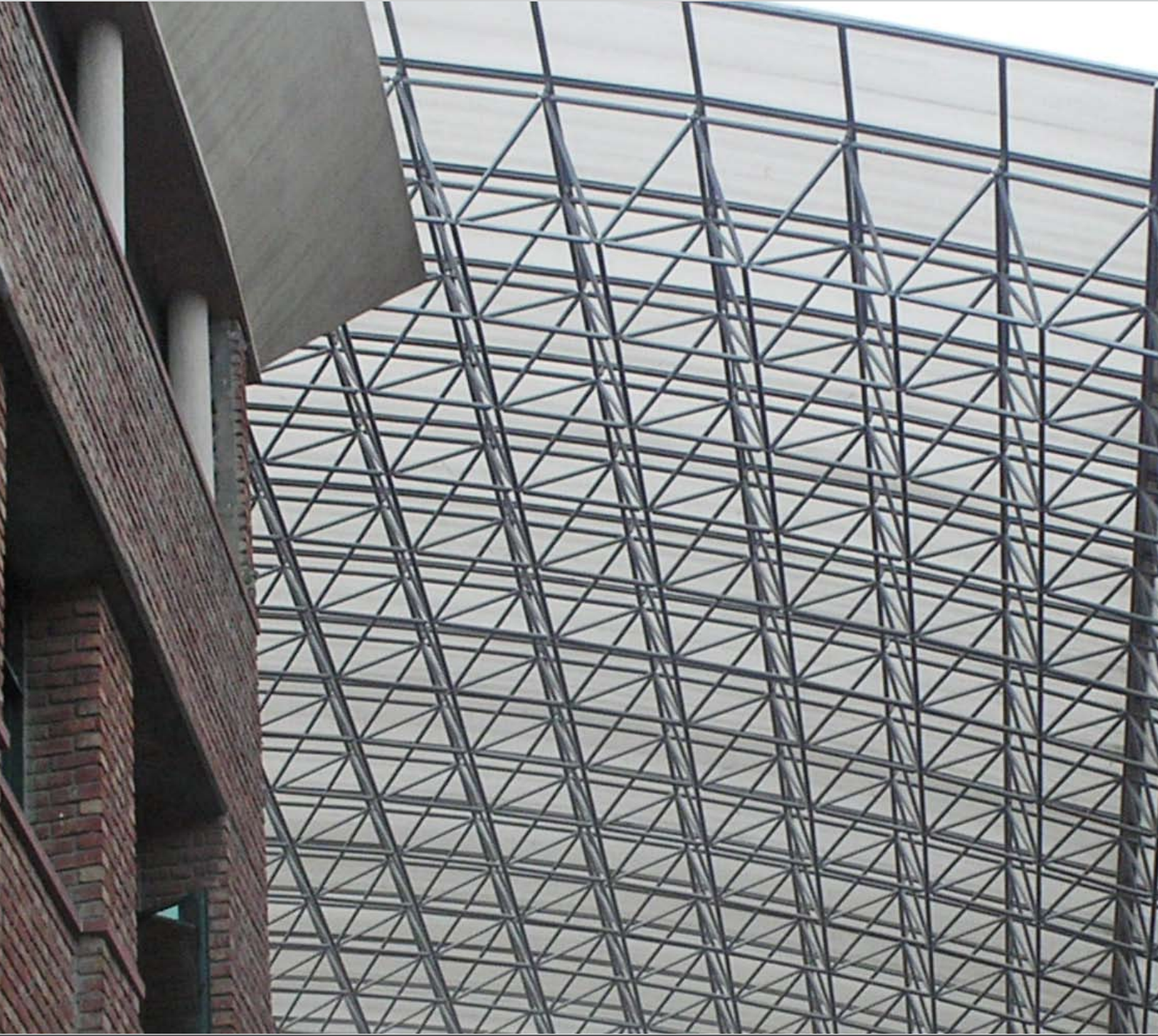


Structural steel products are custom-designed and workshop fabricated hot rolled and welded steel structures for applications such as heavy industries, power plants, oil & gas, petrochemical industry, high rise/commercial buildings, airports and other specialized structures. We are one of the most innovative steel structure fabricators and are always looking to enhance our range of products and services, including project execution.

Our fabrication workshop is equipped to meet the challenges of modern world requirements in terms of quality and speed with suitable high capacity state-of-the-art machineries. A fully equipped design studio supports the workshop with shop drawings and Engineering standards. A well experienced technical team and erection experts adds to the strength for a good performance.



# SPACE FRAME

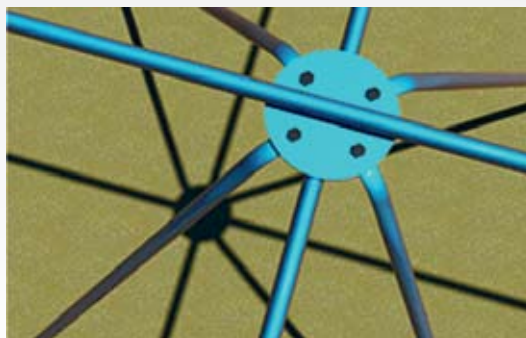


## The Space Frames Types

• Ball Joint Type

• Disc Joint Type

• Welded Joint Type





## MET SPACE FRAME

The Space Frame or Space structures are an innovative form of steel construction for six decades. Space structures are double layered grids. A lightweight rigid structure constructed from interlocking members (web) in a geometric pattern. A space frame is strong because of the inherent rigidity of the triangle. All types of elegant shape could be made by these systems using a variety of grids (geodesic forms). Space frames can be used to span large areas with few interior supports. They possess an excellent appearance with large column free spaces.

We are one of the most experienced space frame fabrication and erection companies backed by years of experience and handful of prestigious projects. Our designers can excel with vivid and exciting solutions in Space Frame Roofing.

### Features of space frames

- High rigidity and stiffness
- Fixed over any span, allows flexibility in design and reduction of columns
- Weight per unit area is less and gives a pleasant outlook
- Elements are demountable and reusable
- Gives realistic design at affordable rates

### Applications:-

- **Warehouses, Factories, Aircraft Hanger, Stadium, Sports Arena & Large Span Roofing**

# SHEETING

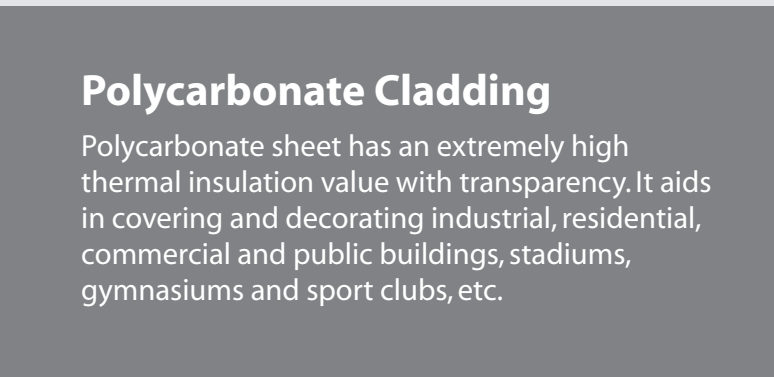
## Steel Cladding

It protects the inside and outside of buildings, tools, instruments, objects, structures, or other appliances. It has incredible self-repairing ability. Stainless steel is easy to sanitize, maintain, and keep clean. The cladding can add to structural strength, while the other materials can be selected for other important functions such as thermal or electrical conductivity.



## Sandwich Panel

Sandwich panels are cost-efficient, prefabricated elements that consist of an inner insulation core between two single skin steel sheet layers. The insulating core can be mineral wool, polyurethane, polyisocyanurate or polystyrene. These panels are light weight, rigid and results in very fast erection. The panels provide sufficient insulation and noise reduction properties.



## Polycarbonate Cladding

Polycarbonate sheet has an extremely high thermal insulation value with transparency. It aids in covering and decorating industrial, residential, commercial and public buildings, stadiums, gymnasiums and sport clubs, etc.

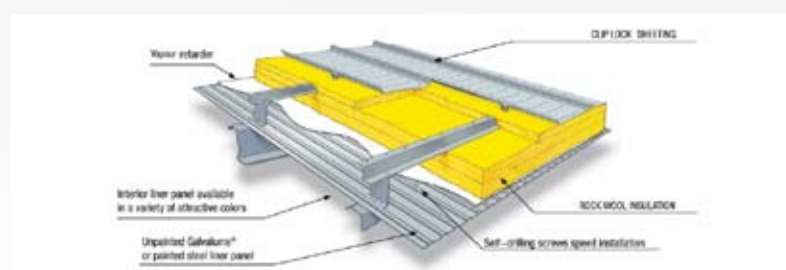


## Clip Lock Sheeting

Clip lock profile is specially designed for roof sheets to avoid the leakages. There is no penetration in sheets during the installation. The strength of roof with Clip lock is more than the Hi rib as there are two stiffeners in each trough. No screws are visible as there is no screw penetration. Clip lock profile is designed to be fixed to roof purlins or wall girts with fixing clips which are concealed during insulation and require no fastening holes through the sheets.

## Roof Insulation

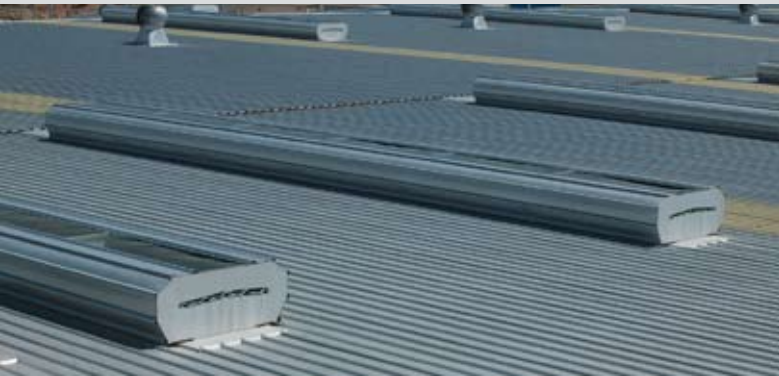
Insulation works as a barrier to heat transfer, helping to keep out unwanted heat during summer and preserving warmth during winter in metal buildings. Insulation effects can be done using materials like rockwool, polyfoam, polinum etc.



# ACCESSORIES

## Turbo Ventilators

The Turbo Air Ventilators helps in replacing the polluted air by fresh air, and hence people working inside will be more active and alive. The proper Air Ventilation will enhance the life of the roof sheet, structures, wall etc by removing accumulated heat, humidity and polluted air. The Air Vents saves the total electricity used for power exhaust systems.

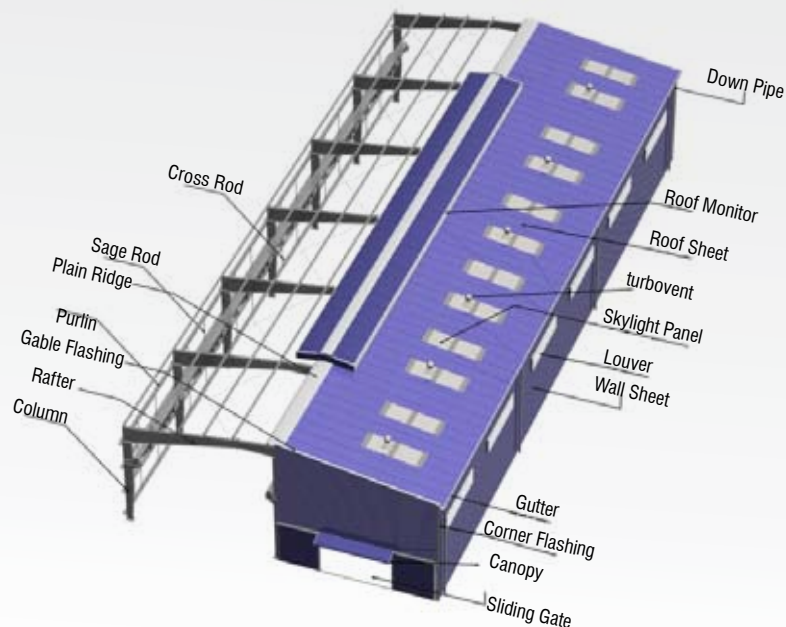


## Ridge Ventilators

A ridge vent is a type of vent installed at the peak of a sloped roof which allows warm, humid air to escape from building's attic. Ridge vents are most common in shingled residential buildings. In Glades the Ridge vents are erected in such a way that it prevents leakage even in the heavy rainy season. It is strong, light weight durable and has got a joint-free fixation.

## Louvers

Louver is a window blind or shutter with horizontal slats that are angled to admit light and air, but to keep out rain, direct sunshine, and noise. They are utilized for natural ventilation and temperature control.



# GENERAL STEEL FABRICATION



At Metarch Engineering, we are fully equipped to handle engineering and fabrication of components of steel from various industrial sectors. Much qualified and experienced technical team coordinates the production process with accuracy and speed, determined to take up jobs of high volume and meet international standards and deadlines.

## Application

Application includes equipment supporting structures, pipe racks, Petro Chemical Plants, Power Plants, conveyor supporting structures, cement plants, towers etc.





# BLASTING AND PAINTING



Elaborate Abrasive Blasting & Painting Equipments to deliver top quality surface finish to our products as per the standard and special requirements.

## Design codes that govern the design procedures and calculations

AISC 1986 & AISC 1989	Frame members (hot rolled or built-up) are in accordance with AISC (American Institute of Steel Construction) Specifications for the design, fabrication and erection of structural steel.
MBMA 1989	Code of Practice for Low Rise Metal Building Design Specifications
IS : 8750 - 1987	Code of practice for design loads of buildings & structures.
IS : 800 -2007	Code of practice for general construction in steel.
IS : 801- 1984	Code of practice for use of Cold formed light gauge Steel Structural Members in general building Construction
BS 5950	for design
BS 6399 part-1 to part-3	for loading
UBC (Uniform Building Code)	for Siesmic

# VESSELS AND STORAGE TANKS



A storage tank is a container, usually for holding liquids, sometimes for compressed gases (gas tank). Storage tanks operate under no (or very little) pressure, distinguishing them from pressure vessels. Storage tanks are available in many shapes, vertical and horizontal cylindrical, open top and closed top, flat bottom, cone bottom, slope bottom and dish bottom.

We manufacture custom storage tanks for the chemical, pharmaceuticals and food processing Industries and committed to ensure the product quality and compliance with customer specification, all of our fabricators. Tanks & Vessels can be fabricated in various designs and options such as shape, capacity and material of content. In shape i.e. vertical, horizontal, rectangular and capsule.

# WASTE MANAGEMENT PRODUCTS



**The Products for Waste Management includes Compactors**

**Skip Container for Chain Loader Trucks**

**Roll - Packer**

**Roll on Roll off Containers for Hook Lift Truck**

**Roto Compactor**

**Waste Bins**



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